

We claim:

- 5 1. A thermally conductive composition for transferring heat from a heat generating component to a cold sink, comprising nitrile rubber, thermally conductive particles and one or more of the group consisting of carboxyl-terminated butadiene, carboxyl-terminated butadiene nitrile and mixtures thereof.
- 10 2. The composition of claim 1, wherein the composition is formed via hot melt extrusion.
- 15 3. The composition of claim 1, wherein the composition comprises in the range of about 5 volume % to about 30 volume % of the carboxyl-terminated butadiene.
- 20 4. The composition of claim 1, wherein the composition comprises in the range of about 5 volume % to about 30 volume % of the carboxyl-terminated butadiene nitrile.
- 25 5. The composition of claim 1, wherein the composition comprises in the range of about 20 volume % to about 85 volume % of the nitrile rubber.
6. The composition of claim 7, wherein the composition comprises in the range of about 25 volume % to about 50 volume % of the nitrile rubber.

7. The composition of claim 1, wherein the conductive particles comprise silver, gold, nickel, copper, metal oxides, boron nitride, alumina, magnesium oxides, zinc oxide, aluminum, aluminum oxide, aluminum nitride, silver-coated organic particles, silver plated nickel, silver plated copper, silver plated aluminum, silver plated glass, silver flakes, carbon black, graphite, boron nitride-coated particles and mixtures thereof.
8. The composition of claim 9, wherein the thermally conductive composition comprises in the range of about 20 wt % to about 95 wt % conductive particles.
9. The composition of claim 1, further comprising one or more additives.
10. The composition of claim 9, wherein the additives are selected from the group consisting of surface active agents, antioxidants, surfactants, diluents, wetting agents, thixotropes, reinforcement materials, silane functional perfluoroether, phosphate functional perfluoroether, silanes, titanates, wax, phenol formaldehyde, epoxy, acrylic, low molecular weight polymers that offer surface affinity and polymer compatibility, and mixtures thereof.
11. The composition of claim 1, wherein the composition is in the form of a paste, supported or free-standing film.
12. The composition of claim 1, further comprising a pressure sensitive adhesive.

13. An electronic device comprising a heat-generating component, a cold sink and the thermal interface material of claim 1.